Claims 1-4, 6-14, 16-18, 20-30, and 32-41 are amended, while claims 12-13, 23, 35 and 40 are canceled without prejudice. Claims 1-4, 6-11, 14, 16-18, 20-22, 24-30, 32-34, 36-39 and 41 thus remain pending. Applicant respectfully traverses the Office's rejections and, in view of the foregoing amendments and the following remarks, respectfully requests that the Office issue a Notice of Allowance.

§ 103 REJECTIONS

Claims 1-4, 7-10, 16-18, 20-21, 28-30, 32-33 and 40 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 6,232,974 to Horvitz et al. (hereinafter, "Horvitz") in view of *Computation Modeling of Visual Attention*, Itti et al. (hereinafter, "Itti").

Claims 6, 14, 27, and 39 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Horvitz in view of Itti in further view of U.S. Patent No. 6,353,824 to Boguraev et al. (hereinafter, "Boguraev").

Claims 11, 22, and 34 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Horvitz in view of Itti in view of Boguraev in further view of in view of *Perception-Based Image Transcoding for Universal Multimedia Access*, Lee et al. (hereinafter, "Lee").

Applicant respectfully traverses the rejections. Nevertheless, Applicant has amended the independent claims in the manner discussed during the interview for the sole purpose of expediting allowance and without conceding the propriety of the Office's rejections.

THE CLAIMS

Claim 1 recites a method comprising (added language underlined):

- modeling an image with respect to multiple visual attentions to generate a respective set of attention objects (AOs) for each attention of the visual attentions;
- analyzing the attention objects and corresponding attributes to optimize a rate of information gain as a function of information unit cost in terms of time associated with multiple image browsing modes, wherein the corresponding attributes for each attention object of the AOs comprise a minimal perceptible time for display of subject matter associated with the attention object; and
- responsive to analyzing the attention objects, generating a browsing path to select ones of the attention objects, <u>wherein generating the browsing path further comprises creating the browsing path in view of a perusing image-browsing mode as follows:</u>
  - o <u>splitting one or more large AOs of the AOs into smaller AOs;</u>
  - o <u>combining AOs in close proximity to one another into one or more attention groups;</u>
  - o <u>arranging the attention groups in decreasing order based on respective attention values;</u>
  - o <u>for each attention group of the attention groups:</u>
    - <u>selecting the attention group as a starting point;</u>
    - <u>for each path of all possible paths from the starting point:</u>
      - <u>calculating a total browsing time and an information fidelity; and</u>
      - <u>if the information fidelity is smaller than a browsing time threshold, discarding the path;</u>
- <u>selecting a non-discarded path having a smallest browsing time as the browsing path, the browsing path connecting each of the attention groups.</u>

In making out a rejection of claim 1 before its amendment, the Office alleges that the combination of Horvitz and Itti renders this claim obvious. Applicant respectfully disagrees. Nevertheless, for the sole purpose of expediting allowance and without conceding the propriety of the Office's rejections, Applicant has amended this claim as discussed during the interview to include

subject matter from allowable claim 12. Applicant respectfully submits that the cited references at least fail to disclose the language added to this claim. As such, Applicant respectfully submits that amended claim 1 as a whole stands allowable.

For at least this reason, Applicant respectfully requests that the Office withdraw the outstanding rejection.

Claims 2-4, 6-11 and 14 depend from claim 1 and, as such, the remarks made above in regards to claim 1 apply equally to these claims. These claims are also allowable for their own recited features, which the references of record have not been shown to disclose, teach, or suggest. In addition, while some of these claims are rejected in view of other references, these other references similarly fail to disclose or suggest the language added to the base claim.

Claim 16 recites a computer-readable medium comprising computer-program instructions executable by a processor for (added language underlined):

- modeling an image with respect to multiple visual attentions to generate a respective set of attention objects (AOs) for each attention of the visual attentions, the AOs representing respective regions of the image;
- analyzing the attention objects and corresponding attributes to in view of a model for human browsing behavior, the model comprising fixation and shifting states, in the fixation state an interesting region of the regions is exploited for information, in the shifting state one region of the regions is replaced with another region of the regions as a function of image view manipulation operations comprising scrolling or tabbing operations, and wherein the corresponding attributes for each attention object of the AOs comprise a minimal perceptible time (MPT) for display of subject matter associated with the attention object; and
- responsive to the analyzing, optimizing a rate of information gain in terms of space as a function of information unit cost in terms of time associated with the model for human browsing behavior to generate a browsing path to select ones of the attention objects;

- wherein the computer-program instructions for optimizing further comprise instructions for determining the rate of information gain R as follows:

$$R = \frac{G}{T_B + T_w},$$

- wherein, G is a total net amount of objectively valuable information gained as determined via information fidelity determinations, T_B is a total amount of time spent on shifting between subsequent fixation areas (AOs), T_W represents an exploiting cost, which is a total duration of the MPTs used while in a fixation state.

In making out a rejection of claim 16 before its amendment, the Office alleges that the combination of Horvitz and Itti renders this claim obvious. Applicant respectfully disagrees. Nevertheless, for the sole purpose of expediting allowance and without conceding the propriety of the Office's rejections, Applicant has amended this claim to include subject matter from allowable claim 23 as discussed during the interview. Applicant respectfully submits that the cited references at least fail to disclose the language added to this claim. As such, Applicant respectfully submits that amended claim 16 as a whole stands allowable.

For at least this reason, Applicant respectfully requests that the Office withdraw the outstanding rejection.

Claims 17-18, 20-22 and 24-27 depend from claim 16 and, as such, the remarks made above in regards to claim 16 apply equally to these claims. These claims are also allowable for their own recited features, which the references of record have not been shown to disclose, teach, or suggest. In addition, while some of these claims are rejected in view of other references, these other references similarly fail to disclose or suggest the language added to the base claim.

Claim 28 recites a computing device comprising a processor coupled to a memory, the memory comprising computer-program instructions executable by the processor for (added language underlined):

- modeling an image with respect to multiple visual attentions to generate a respective set of attention objects (AOs) for each attention of the visual attentions, the AOs representing respective regions of the image;
- analyzing the attention objects and corresponding attributes to in view of a model for human browsing behavior, the model comprising fixation and shifting states, in the fixation state an interesting region of the regions is exploited for information, in the shifting state one region of the regions is replaced with another region of the regions as a function of image view manipulation operations comprising scrolling or tabbing operations, and wherein the corresponding attributes for each attention object of the AOs comprise a minimal perceptible time (MPT) for display of subject matter associated with the attention object; and
- responsive to the analyzing, optimizing a rate of information gain in terms of space as a function of information unit cost in terms of time associated with the model for human browsing behavior to generate a browsing path to select ones of the attention objects; and
- wherein the computer-program instructions for optimizing further comprise instructions for determining the rate of information gain R as follows:

$$R = \frac{G}{T_B + T_w}$$

- wherein, G is a total net amount of objectively valuable information gained as determined via information fidelity determinations, T_B is a total amount of time spent on shifting between subsequent fixation areas (AOs), T_W represents an exploiting cost, which is a total duration of the MPTs used while in a fixation state.

In making out a rejection of claim 28 before its amendment, the Office alleges that the combination of Horvitz and Itti renders this claim obvious. Applicant respectfully disagrees. Nevertheless, for the sole purpose of expediting

allowance and without conceding the propriety of the Office's rejections, Applicant has amended this claim to include subject matter from allowable claim 35 as discussed during the interview. Applicant respectfully submits that the cited references at least fail to disclose the language added to this claim. As such, Applicant respectfully submits that amended claim 28 as a whole stands allowable.

For at least this reason, Applicant respectfully requests that the Office withdraw the outstanding rejection.

Claims 29-30, 32-34 and 36-39 depend from claim 28 and, as such, the remarks made above in regards to claim 28 apply equally to these claims. These claims are also allowable for their own recited features, which the references of record have not been shown to disclose, teach, or suggest. In addition, while some of these claims are rejected in view of other references, these other references similarly fail to disclose or suggest the language added to the base claim.

<u>ALLOWED CLAIM</u>

In the Action, the Office indicates that independent claim 41 is allowed. Applicant sincerely thanks the Office for this indication.

CONCLUSION

For at least the foregoing reasons, all pending claims are in condition for allowance. Applicant respectfully requests reconsideration and withdrawal of the rejections and an early notice of allowance. If any issue remains unresolved that would prevent allowance of this case, Applicant respectfully requests the Office to contact the undersigned attorney to resolve the issue.

Respectfully Submitted,

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